COST IN U.S. DOLLARS SINCE FILE TOTAL

ENTRY SESSION

FULL ESTIMATED COST 56.32 111.74

DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS) SINCE FILE TOTAL ENTRY SESSION

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FILE 'MEDLINE' ENTERED AT 16:51:57 ON 15 FEB 2006

FILE 'HCAPLUS' ENTERED AT 16:51:57 ON 15 FEB 2006

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=> s dihydroorotase and herbicide L13 5 DIHYDROOROTASE AND HERBICIDE

=> dup rem 113

PROCESSING COMPLETED FOR L13

L14 3 DUP REM L13 (2 DUPLICATES REMOVED)

=> d l14 1-3 ibib ab

L14 ANSWER 1 OF 3 SCISEARCH COPYRIGHT (c) 2006 The Thomson Corporation on

STN

ACCESSION NUMBER: 2002:222230 SCISEARCH

THE GENUINE ARTICLE: 525ZQ

TITLE: Barbiturase, a novel zinc-containing amidohydrolase

involved in oxidative pyrimidine metabolism

AUTHOR: Soong C L; Ogawa J; Sakuradani E; Shimizu S (Reprint)

CORPORATE SOURCE: Kyoto Univ, Grad Sch Agr, Div Appl Life Sci, Sakyo Ku, Kitashirakawa Oiwakecho, Kyoto 6068502, Japan (Reprint);

Kyoto Univ, Grad Sch Agr, Div Appl Life Sci, Sakyo Ku,

Kyoto 6068502, Japan

COUNTRY OF AUTHOR: Japan

SOURCE: JOURNAL OF BIOLOGICAL CHEMISTRY, (1 MAR 2002) Vol. 277,

No. 9, pp. 7051-7058.

ISSN: 0021-9258.

PUBLISHER: AMER SOC BIOCHEMISTRY MOLECULAR BIOLOGY INC, 9650

ROCKVILLE PIKE, BETHESDA, MD 20814-3996 USA.

DOCUMENT TYPE: Article; Journal

LANGUAGE: English

REFERENCE COUNT: 48

ENTRY DATE: Entered STN: 22 Mar 2002

Last Updated on STN: 22 Mar 2002

ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

AB Barbiturase, which catalyzes the reversible amidohydrolysis of barbituric acid to ureidomalonic acid in the second step of oxidative pyrimidine degradation, was purified to homogeneity from Rhodococcus erythropolis JCM 3132. The characteristics and gene organization of barbiturase suggested that it is a novel zinc-containing amidohydrolase that should be grouped into a new family of the amidohydrolases

superfamily. The amino acid sequence of barbiturase exhibited 48% identity with that of herbicide atrazine-decomposing cyanuric acid amidohydrolase but exhibited no significant homology to other proteins, indicating that cyanuric acid amidohydrolase may have evolved from barbiturase. A putative uracil phosphoribosyltransferase gene was found upstream of the barbiturase gene, suggesting mutual interaction between pyrimidine biosynthesis and oxidative degradation. Metal analysis with an inductively coupled radiofrequency plasma spectrophotometer revealed that barbiturase contains similar to4.4 mol of zinc per mol of enzyme. The homotetrameric enzyme had K-m and V-max values of 1.0 mM and 2.5 mumol/min/mg of protein, respectively, for barbituric acid. The enzyme specifically acted on barbituric acid, and dihydro-L-orotate, alloxan, and cyanuric acid competitively inhibited its activity. The full-length gene encoding the barbiturase (bar) was cloned and overexpressed in Escherichia coli. The kinetic parameters and physicochemical properties of the cloned enzyme were apparently similar to those of the wild-type.

L14 ANSWER 2 OF 3 HCAPLUS COPYRIGHT 2006 ACS on STN DUPLICATE 1

ACCESSION NUMBER:

2001:185903 HCAPLUS

DOCUMENT NUMBER:

134:233609

TITLE:

Potato dihydroorotase and cDNA and methods

for screening for herbicides

INVENTOR(S):

Ehrhardt, Thomas; Lerchl, Jens; Stitt Nigel, Marc;

Zrenner, Rita; Schroeder, Michael

PATENT ASSIGNEE(S):

Basf Aktiengesellschaft, Germany PCT Int. Appl., 38 pp.

SOURCE:

CODEN: PIXXD2

DOCUMENT TYPE:

Patent

LANGUAGE:

German

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

	PATENT NO.							DATE		APPLICATION NO.						DATE		
		O 2001018190 O 2001018190				A2				WO 2000-EP8581						20000902		
		W:	CR, HU, LU, SD,	CU, ID, LV,	CZ, IL, MA, SG,	DE, IN, MD,	DK, IS, MG,	DM, JP, MK,	DZ, KE, MN,	EE, KG, MW,	ES, KP, MX,	BG, FI, KR, MZ, TT,	GB, KZ, NO,	GD, LC, NZ,	GE, LK, PL,	GH, LR, PT,	GM, LS, RO,	HR, LT, RU,
		RW:	GH, DE,	GM, DK,	KE, ES,	FI,	FR,	GB,	GR,	IE,	IT,	TZ, LU, NE,	MC,	NL,	PT,	•		•
	CA 2379536				AA 20010315				CA 2000-2379536					20000902				
		BR 2000013798 EP 1210437								BR 2000-13798 EP 2000-962429								
			AT,	BE,	CH,	DE,	DK,		FR,	GB,	GR,	IT,						
	JP 2003509026							20030311			JP 2001-522401							
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AB	WO 2000-EP8581 W 20000902 AB The invention relates to a potato cDNA which codes for																	

AB The invention relates to a potato cDNA which codes for dihydroorotase (EC 3.5.2.3). The invention also relates to the use of these nucleic acids for producing a system for screening for dihydroorotase-inhibiting compds., potential herbicides. Thus, transgenic potatoes expressing antisense dihydroorotase cDNA exhibited reduced growth. Growth inhibition was proportional to the degree of inhibition of dihydroorotase gene expression.

L14 ANSWER 3 OF 3 BIOTECHDS COPYRIGHT 2006 THE THOMSON CORP. on STN DUPLICATE 2

ACCESSION NUMBER: 1998-02452 BIOTECHDS

TITLE: AtzC is a new member of the aminohydrolase protein

superfamily and is homologous to other atrazine-metabolizing

enzymes;

potential application in atrazine pesticide degradation

AUTHOR: Sadowsky M J; Tong Z; De SouzaM; Wackett L P

CORPORATE SOURCE: Univ.Minnesota

LOCATION: Department of Soil, Water and Climate, University of

Minnesota, 439 Borlaug Hall, 1991 Upper Buford Circle, St.

Paul, MN 55108, USA.

Email: sadowsky@soils.umn.edu

SOURCE: J.Bacteriol.; (1998) 180, 1, 152-58

CODEN: JOBAAY
ISSN: 0021-9193

DOCUMENT TYPE: Journal LANGUAGE: English

Pseudomonas sp. strain ADP metabolizes atrazine to cyanuric acid via 3 AB plasmid-encoded enzymes, AtzA, AtzB and AtzC. The 3rd gene in the atrazine catabolic pathway, atzC, was cloned from a Pseudomonas sp. strain ADP cosmid library as a 25-kb EcoRI DNA fragment in Escherichia coli. atzC gene was further delimited by functional analysis following transposon Tn5 mutagenesis and subcloned as a 2 kb EcoRI-AvaI fragment. An Escherichia coli strain containing this DNA fragment expressed N-isopropylammelide-isopropylamino-hydrolase activity, metabolizing N-isopropylammelide stoichiometrically to cyanuric acid and N-isopropylamine. The 2.0-kb DNA fragment was sequenced and found to contain a single open reading frame of 1,209 nucleotides, encoding a protein of 403 amino acids. AtzC showed modest sequence identity of 29 and 25%, respectively, to cytosine-deaminase and dihydroorotase , both members of an amidohydrolase protein superfamily. Overall, data suggested that AtzA, AtzB and AtzC diverged from a common ancestor and, by random events, have been reconstituted onto an atrazine catabolic plasmid. (37 ref)

=> d his

(FILE 'HOME' ENTERED AT 16:37:14 ON 15 FEB 2006)

FILE 'MEDLINE, HCAPLUS, BIOSIS, EMBASE, BIOTECHDS, SCISEARCH' ENTERED AT 16:37:55 ON 15 FEB 2006

- L1 174 S DIHYDROOROTASE AND (INHIBITOR OR HERBICID?)
- L2 87 DUP REM L1 (87 DUPLICATES REMOVED)
- L3 49 S L2 AND 1980-1999/PY
- L4 49 FOCUS L3 1-
- L5 1 S L4 AND PLANT
- L6 1 S PLANT DIHYDROOROTASE AND (INHIBITOR OR HERBICID?)
- L7 1 S POTATO DIHYDROOROTASE AND (INHIBITOR OR HERBICID?)
- L8 2 S (POTATO OR TOBACCO OR ARABIDOPSIS OR TOMATO OR SOLANUM OR WHE
- L9 1 DUP REM L8 (1 DUPLICATE REMOVED)

FILE 'REGISTRY' ENTERED AT 16:47:55 ON 15 FEB 2006

- L10 350 S DIHYDROOROTASE
- L11 0 S PLANT DIHYDROOROTASE
- L12 136 S AMINOHYDROLASE

FILE 'MEDLINE, HCAPLUS, BIOSIS, EMBASE, BIOTECHDS, SCISEARCH' ENTERED AT 16:51:57 ON 15 FEB 2006

- L13 5 S DIHYDROOROTASE AND HERBICIDE L14 3 DUP REM L13 (2 DUPLICATES REMOVED)
- => log y

COST IN U.S. DOLLARS SINCE FILE TOTAL

ENTRY SESSION

FULL ESTIMATED COST 20.46 132.20